

6. A powder coating composition according to Claim 5, wherein the biocide is 3-(3,4-dichlorophenyl)-1, 1-dimethylurea.

7. A powder coating composition according to Claim 1 or 2, wherein the biocide is an imidazolcarbamate.

8. A powder coating composition according to Claim 1, wherein the polymer powder has a specific gravity of from 1.2 to 1.9 and a particle size less than 100 microns.

9. A powder coating composition according to Claim 1, wherein the polymer particles comprise a polyester or epoxypolyester or polyurethane or acrylic or other thermosetting powder.

10. An anti-microbial powder coating composition comprising an anti-microbial agent homogeneously dispersed within the particles of a resin based powder.

11. The composition of Claim 10, wherein the powder coating composition comprises 90 to 99.9% by weight of one or more thermosetting and/or thermoplastic compositions based on epoxy, polyester, acrylate, and/or polyurethane resins and 0.1 to 10% by weight of one or more anti-microbial agents.

12. The composition of Claim 10, wherein said anti-microbial agent further comprises solid anti-microbial agents.

13. A method of applying an anti-microbial coating on an article, said method comprising contacting said article with an anti-microbial powder coating composition under conditions sufficient to cause said anti-microbial powder coating composition to adhere to said article, the composition comprising particles each of which is a thermosetting polymer powder and contains an organic biocide, in a concentration of from 0.1 to 20% by weight, whereby the biocide is substantially uniformly distributed throughout the coating.

14. A method of applying an anti-microbial coating on an article, said method comprising contacting said article with an anti-microbial powder coating composition under conditions sufficient to cause said anti-microbial powder coating composition to adhere to said article, the composition comprising particles of a thermoplastic polymer containing an organic biocide, wherein the organic biocide is substantially uniformly distributed throughout the composition at a concentration of 0.1 to 20% by weight of the coating.

15. A method of applying an anti-microbial coating on an article, said method comprising contacting said article with an anti-microbial powder coating composition under conditions sufficient to cause said anti-microbial powder coating composition to adhere to said article, the composition comprising an anti-microbial agent homogeneously dispersed with in the particles of a resin based powder.

16. A method for preparing an anti-microbial powder coating composition comprising homogeneously mixing an anti-microbial agent into a powder coating pre-mix.

17. A method of distributing an organic biocide substantially uniformly in a thermosetting powder coating composition, the method comprising:

a mixing precursors of the thermosetting polymer powder together with the organic biocide in a concentration of 0.1 to 20% by weight and heating the mixture to form a hot mixture;

extruding the hot mixture into sheet form;

grinding the granules to a powder having the size of particles appropriate to powder coating; and

sieving the powder to less than 100 microns whereby the powder may be spray electrostatically.

18. A method of forming a coating on a metal substrate wherein said coating exhibits anti-microbial activity, the method comprising:

a mixing precursors of a thermosetting polymer powder together with particles of an organic biocide to form a mixture and then heating the mixture.

extruding the mixture into sheet form;

granulating the sheet to form granules;

grinding the granules to form a powder;

sieving the powder to the size of particles appropriate to electrostatic spraying;

electrostatically spraying the sieved powder on to the metal substrate to form said coating and;

curing the coating to provide said anti-microbial coating on the metal substrate.

19. A powder coating composition of claim 1, wherein the biocide comprises a liquid biocide.

20. The composition of claim 10, wherein the anti-microbial agent comprises a liquid anti-microbial agent.

21. The composition of claim 10, wherein the anti-microbial agent further comprises N-(trichloromethyl)-thiophthalamide.

22. The composition of claim 10, wherein the anti-microbial agent further includes 2-bromo-2-nitropropane-1,3-diol.

23. The composition of claim 22, wherein the 2-bromo-2-nitropropane-1,3-diol concentration is greater than 1 weight percent.

24. The composition of claim 23, wherein the 2-bromo-2-nitropropane-1,3-diol concentration is about 5 weight percent.

25. The composition of claim 10, wherein the anti-microbial agent further comprises 3,5-dimethyltetrahydro-1,3,5-2H-thiazine-2-thione.

26. The composition of claim 25, wherein the 2,5-dimethyltetrahydro-1,3,5-2H-thiazine-2-thione concentration is greater than 1 weight percent.

27. The composition of claim 26, wherein the 2,5-dimethyltetrahydro-1,3,5-2H-thiazine-2-thione concentration is about 5 weight percent.

28. A method of applying a coating on an article to provide an anti-microbial coating thereon, the method comprising:

electrostatically spraying a coating composition on to said article; and

baking said electrostatically sprayed coating composition on to said article at a temperature of 140°C to 210°C;

wherein the coating composition comprises particles of a thermoplastic polymer containing a biocide, and said biocide is substantially uniformly distributed throughout the coating composition at a concentration of 0.1 to 20% by weight of the coating composition.

29. The method of claim 16, further comprising blending the components of the powder coating composition using a pre-mixer, feeding the mixture into an extruder, and heating the mixture to a temperature high enough to melt it, cooling the melt, and processing the solid extrudate into a coating powder.

30. The method of claim 16, further comprising mixing liquid anti-microbial agents with particles of a solid support material and mixing the particles into the coating pre-mix.

31. The method of claim 30, further comprising treating the powder coating